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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,107	11/26/2003	Keiji Okada	1155-0275P	6197

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EXAMINER	
ASINOVSKY, OLGA	

ART UNIT	PAPER NUMBER
1711	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/721,107	OKADA ET AL.	
	Examiner	Art Unit	
	Olga Asinovsky	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/157,872.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/18/2004 (2 page*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over VerStrate et al U.S. patent 4,804,794.

3. Reference has been considered in the parent case 10/157,872.

4. Applicants amend claim 1 by inserting that each polymer block (i) and (ii) has "a slope of an intramolecular composition distribution of absolute value of 0.1 to 0."

5. All discussions of reference to VerStrate are adequately set here.

Ver Strate discloses olefinic copolymers of ethylene and at least one other alpha-olefin monomer containing C3 to C18 atoms, column 12, line 1. Each copolymer is intramolecularly heterogeneous and intermolecularly homogeneous, column 8, lines 18-20. Two olefinic copolymers are different from each other by different ethylene content and crystallinity value, column 10, lines 33-68 and column 11, lines 1-7. One ethylene-alpha-olefin copolymer having a high crystallinity has an average ethylene content of at least 62 wt.% (column 10, line 51, claim 1, column 39 and claim 14 column 40). The low crystallinity ethylene-alpha-olefin copolymer comprises an average ethylene content from about 20 to 53 wt.%, column 10, line 60. The copolymer can have a molecular weight distribution (MWD) =Mw/Mn being very narrow, column 18, line 68, less than

1.5, column 19, lines 5-8, claim 7 at column 39, or less than 1.2, claim 9 at column 39. The molecular weight of copolymer can vary over a wide range from about 2,000 to 12,000,000, column 18, lines 47-54, column 28, lines 31-40 and claim 12 at column 39. The preferred minimum molecular weight is about 10,000 and the preferred maximum is about 1,000,000. The preferred minimum molecular weight of a block polymer and maximum molecular weight of a block polymer in Ver Strate invention are overlapping in the present claim 1. Ver Strate discloses a polymerization process for producing copolymer at column 41, claim 38, wherein a copolymer (a) and copolymer (b) are readable in applicants' claimed (i) block polymer and (ii) block polymer, see column 19, line 10 through column 20, line 67. Catalyst system includes Ziegler-Natta catalyst for producing olefin polymerization, column 21, lines 35-68. Ver Strate teaches that the catalyst used to produce alpha-olefin copolymers has a profound effect on copolymer product properties such as compositional dispersity and MWD, column 20, lines 61-68. The polymerization process conditions are controlled by the sequence charge of monomer(s) and catalyst, residence time of the reaction mixture, temperature control of the reaction mixture and type of the reactor, column 21 through column 26. Reference discloses that alpha-olefin copolymers having very narrow MWD and having specific intramolecular CD can be made by direct polymerization, column 27, lines 49-51 and 60, column 21, line 21. The block copolymer can be used as a viscosity modifier in lubricating oil, column 8, lines 65-66, column 9, line 27, column 28, lines 41-42.

The difference between the present claims and Ver Strate is that reference does not disclose a weight average molecular weight for each individual segment. It would have been obvious to one of ordinary skill in the art to consider that during the polymerization process for producing the (a) block polymer and (b) block polymer the amount of the monomers can be controlled for the purposes of obtaining the desired average molecular weight of the first block polymer (a) and a second block polymer (b) for using a said block copolymer as lubricating oil additive. Because reference discloses a block copolymer having the same chemical formulation, the same utility of using, the same Mw/Mn =1.5 and the minimum and maximum weight-average molecular weight of the block copolymer is overlapping the weight average molecular weight of a block copolymer in the present claim 1.

Also, reference does not disclose a slope of an intramolecular composition distribution having absolute value of 0.1 to 0. However, reference discloses that the property of the copolymer is related to intramolecular compositional dispersity (compositional variation within a chain) referred to as Intra-CD, and related to intermolecular compositional dispersity (compositional variation between chains) referred to as Inter-CD, column 12, lines 55-60, 62-68 and column 13, lines 15-29. It would have been obvious to one of ordinary skill in the art to consider that the desired intramolecular compositional distribution value of 0.1 to 0 could be obtained in Ver Strate because the process conditions for producing ethylene-alpha-olefin copolymers are controlled and reference discloses that alpha-olefin copolymers having very narrow MWD and having specific

intramolecular CD can be made by direct polymerization, column 27, lines 49-51 and 60, column 21, line 21.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References have been considered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Olga Asinovsky
Examiner
Art Unit 1711

O.A

February 08, 2005

James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700